

Claims

I claim:

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5    1. A communication device for use behind an ear, comprising:  
      a housing;  
      a sound delivery tube coupled to the housing; and  
      a self-retaining element, coupled to at least one of the housing and the  
      sound delivery tube,  
      wherein the self-retaining element rests beneath an inferior crus of the ear  
      and provides positive retention of the communication device to the ear when the  
      sound delivery tube is positioned for sound delivery to the ear.
- 10    2. The communication device of claim 1 wherein the self-retaining element  
      comprises compound curves in two planes.
- 15    3. The communication device of claim 2 wherein the compound curves of the  
      self-retaining element fits anatomically into an inferior crus fold in a concha bowl.
- 20    4. The communication device of claim 1 wherein the self-retaining element  
      contacts skin inside a fold in a concha bowl beneath the inferior crus of the ear.
- 25    5. The communication device of claim 1 wherein the self-retaining element  
      provides positive retention to the ear on an x-axis, a y-axis and a z-axis.
6. The communication device of claim 1 wherein the self-retaining element  
      comprises spring properties.
- 30    7. The communication device of claim 1 wherein the self-retaining element is  
      positioned approximately ninety degree with respect to the sound delivery tube.

8. The communication device of claim 1 wherein the self-retaining element is molded onto the sound delivery tube.
- 5 9. The communication device of claim 1 wherein the self-retaining element comprises one of the following: an "S" shape spring curve, and a "J" shape spring curve.
- 10 10. The communication device of claim 1 wherein the self-retaining element is flexible.
11. The communication device of claim 1 wherein the self-retaining element is semi-rigid.
- 15 12. The communication device of claim 1 wherein the self-retaining element is constructed from a material selected from a group consisting of: rubber, plastic, and metal.
- 20 13. The communication device of claim 1 wherein the ear comprises a pinna, a sulcus, and a concha, and wherein the self-retaining element, when positioned on the ear, applies positive retention across the pinna of the ear between the sulcus and the concha.
- 25 14. The communication device of claim 1 wherein the communication device is wireless.
15. The communication device of claim 1 wherein the communication device is wired.

16. The communication device of claim 1 wherein the housing has a first section that rests on a sulcus of the ear, and wherein the positive retention of the communication device to the ear results from a space between the first section of the housing and the self-retaining element. *the space of the sound tube*
- 5 17. The communication device of claim 16 wherein a dimension across the space between the first section of the housing and the self-retaining element is 0.118 inches +/- .054.
- 10 18. The communication device of claim 16 wherein the space between the first section of the housing and the self-retaining element becomes gradually smaller as the self-retaining element extends further away from the sound delivery tube.